THE OLIVE-BACKED THRUSH (*Hylocichla ustulata swainsoni*) AT HIS SUMMER HOME.

BY CORDELIA J. STANWOOD.

A more or less irregular line of woodland — evergreen, hardwood, mixed growth — stretches from Trenton, Maine, on Frenchmans Bay, opposite Bar Harbor, along the Union River, almost to the post office in the city of Ellsworth. When the Thrushes appear in the spring, they come from the direction of the river, through the cool, damp, mossy aisles of these woodlands. As the time draws near for the coming of the Thrushes, I take the overgrown footways that mark old woodroads, walk toward the river, and listen with bated breath for the first notes of the Thrushes — the Hermit, the Veery, the Olive-backed.[1]

The Hermit (*Hylocichla guttata pallasi*) the first to arrive, usually announces his presence by an early morning hymn. He comes about the middle of April, when the ground is still slightly frozen at sunrise, when a thin coat of ice silvers every pool, when a white frost glistens on each sere field, and the city of Ellsworth slumbers in a thick, white mist, from which the steeples and roofs just emerge. Sometimes he is overtaken, several days after his arrival, by one of those cruel sleet and hail storms that coats everything in ice, and makes life very hard for our tired, hungry migrant. The Hermit is with us about a month before our other two resident Thrushes, the Veery and the Olive-backed, appear. One year the Olive-backed calls before the Veery, the following year the order of their coming may be reversed. May 8 (1913), very early in the morning, I heard two or more Veeries in excellent voice. My earliest record for the call note of the Olive-backed Thrush is May 15 (1911).

Although at the time of the arrival of these latter birds, the foliage is beginning to appear on the trees, the catkins of some of the alders, willows, and birches are in full bloom,

[1] The Hermit Thrush at Home. By Cordelia J. Stanwood. Nature and Culture, May, 1913.

Nest of Olive-backed Thrush (*Hylocichla ustulata swainsoni*) in its environment.

and the hobble bush, wild pear, and arbutus cast upon the gentle breezes, the delicate, sweet odors that go to make up the bewitching, elusive essence of a spring day, even yet the ground is sometimes frozen in the morning, and there are occasional flurries of hail and snow, and heavy white frosts.

The Veery (*Hylocichla fuscescens fuscescens*) is but locally common, choosing the swales and adjoining thickets for his habitat, but wherever there is an estate with wooded grounds, or a farm with pastures and woodlands, here the Olive-backed Thrush and the Hermit erect their dwelling-places.

Summary of Facts.

1908—June 8, a nest completed; June 8, bird lining nest; June 9, bird incubating; June 19, nest completed; July 2, nest containing young ready to leave; July 3, bird incubating; July 8, nest containing young one day old; September 6, Olive-backed eating string cherries.

1909—May 31, Olive-backed calling; June 13, bird lining nest; June 15, nest containing one egg; July 4, bird lining nest; July 5, bird incubating three eggs; July 24, bird in full song.

1910—May 27, bird in song; July 5, nest of three young five days old; July 7, nest of three young seven days old; July 26, last heard in song; August 21, last seen.

1911—May 15, first heard calling; May 26, in song; July 8, last heard in song.

1912—May 19, bird calling; May 2, in song; June 9, bird building; June 10, bird incubating four eggs; July 26, last heard in song; September 7, Olive-backed calling.

1913—May 19, bird calling; May 26, bird in song; June 3, bird incubating; June 23, bird incubating; June 29, nest containing two eggs, later four; July 31, bird in song; October 1, last seen.

One season the Hermit Thrush is the more common; he builds in distant woods on the fringes of clearings and open spaces, or he may build in glades in the less frequented thick-

ets that skirt pastures, fields, and much traveled thoroughfares; the following season the Olive-backed is the more conspicuous in numbers, and locates his nest in the same spots, save that the Hermit constructs his nest under the tree, and the Olive-backed places his nest in the tree. At times the Olive-backed is so common in the vicinity of dwellings that I have heard his vigorous melody from the post office corner.

Though the Hermit and the Veery are more glorious songsters than the Olive-backed Thrush, I doubt if either of them can compete with the latter in intelligence and vigor. His call notes *whit! and whit-yer!* and his song are distinctive, but he has a way of slipping into the underbrush when disturbed, that renders it difficult to trace his notes to their source. For this reason the Olive-backed Thrush has been confused with nearly all the other Thrushes.

The spring of 1913 brought large numbers of Olive-backed Thrushes to our locality; they nested in the narrow strips of virgin growth just outside the hay fields, quite as commonly as in the far away woodlands. Sitting in an umbrella blind before the nests of two pairs of Olive-backed Thrushes, the stillness was broken every few moments by passing automobiles. While the young Thrushes are in the nest, the male bird sings nearly all the time. I could but wonder why they chose such noisy spots in which to give their kindergarten exercises, when a vast woodland stretched away before them.

The nest of the Olive-backed is a bulky, statant, increment structure, located in the tree much after the fashion of the Robin's nest. Its rough exterior gives it a greater appearance of size than it really possesses. Because the nests are so large and so conspicuously placed, very many of them are pillaged by Crows, squirrels and other wild animals, and the household cat destroys vast numbers of the immature birds. Most of the nests that have come under my observation, have been found anywhere from one to ten feet above the ground, in firs and spruces. One was constructed in a hemlock, and another in a gray birch.

The birds build their interesting domiciles the first of June

The Olive-backed Thrush hears a movement in the blind.
(Photo by Cordelia J. Stanwood.)

and again the first of July. Whether they raise two broods or not during the season, I have been unable to determine. A clutch consists of from three to four green-blue eggs, spotted all over with cinnamon-brown. The spots have a tendency to mass themselves around the larger end. The bird lays an egg each day before 10 o'clock in the morning, and begins to incubate by 12 o'clock of the day on which the clutch is completed. Although the eggs are hatched so irregularly, I have never seen the bird incubating before the clutch was completed. I found young in the nest in 1908 on the twelfth and thirteenth days, and in 1913 on the tenth, eleventh and twelfth days from the beginning of the incubation period. The nestlings mature sufficiently to leave the nest in from ten to twelve days.[1]

The summer of 1913 I found two nests of the Olive-backed Thrush on the borders of hay fields, not far from much-traveled High Street, the Bar Harbor road.

The first nest I moved fifteen feet into the sun, trimmed off the branches so as to get a strong light upon it, and spent nearly all my time at this nest in an effort to secure good photographs of the parent Olive-backed Thrushes and the young. I was careful not to expose the nestlings too long to the hot sun, and always tied fresh branches around the nest on leaving the blind.

The second nest I simply trimmed around so that I could observe the Thrushes clearly while feeding and caring for the little ones. This nest, also, I shielded with branches when not observing in the blind.

Since, so far as I know, there is no study of the nest life of the Olive-backed Thrush, a detailed account of my experiences at this nest may be of interest to my readers.

June 29, 1913, I came upon the nest of an Olive-backed Thrush containing two eggs. The nest was constructed in

[1] June 2, 1908, found new nest of Olive-backed Thrush.

June 3 to 6, four eggs; 12 M., bird incubating. June 18, two young Thrushes; natal down not dry at 11 A. M. 4 P. M., three birds in the nest. June 19, four birds.

the crotch of a gray birch, formed by the bole of a sapling and a rudimentary branch about three feet above the ground. The nest was surrounded by fir branches. Each day an egg was added to the set until there were four. The afternoon that the clutch was completed, when I approached the nest, the bird was quite oblivious of every duty save that of incubation. She seemed unaware of my presence. Until this time I did not see the bird around the nest, yet the eggs hatched, as before intimated, at very irregular intervals.

The eighth day of incubation I placed the blind in the neighborhood of the nest, that the birds might get accustomed to it. On the tenth day, when I went to observe at the blind, the female was off the nest; I peeped in, and to my astonishment, beheld two young birds on which the natal down was entirely dry. The next morning at 9:30 there were three nestlings in the nest, and at 5:00 p. m. the fourth egg was still unhatched. On the twelfth day of incubation, at 11:55 a. m., there was a fourth young Thrush in the nest on which the natal down was not entirely dry.

I have studied no other bird whose eggs were hatched so irregularly, save the Black-billed Cuckoo. The Cuckoo begins to incubate as soon as an egg is laid, and does not always lay on consecutive days.[1]

In the case of the Olive-backed Thrush, the fact that the young came from the egg at such long intervals, seemed to be a wise provision of nature. The mother bird brooded the young, except during the rest period, for the greater part of the time during the first three or four days. She moved back on the nest, stood astride the young, and cared for one fragile chick at a time; she pecked him and touched him with her beak until he gave the food reaction readily, fed him by re-

[1] July 11, 1908, I found the nest of a Black-billed Cuckoo containing two eggs. The bird was brooding. Two days later there was a third egg. As nearly as I could determine, the three eggs were hatched on two consecutive days. The two older birds left the nest at the beginning of the climbing period, and the parents, it would seem, devoted themselves to the mature nestlings. I found the youngest dead in the nest after a rain storm.

Olive-backed Thrushes coming with food for her young.
(Photo by Alfred A. Langewald, Jr.)

gurgitation, ate the excrement, burrowed under the young, ate the parasites in the nest and on the young. Sometimes she did this as often as once in four minutes. The male, from the beginning, called the female from the nest regularly for the rest period and fed the young both fresh and chrushed and macerated food. In such a well-ordered nest there was no opportunity for a nestling to starve to death.

To distinguish the birds in nest two, I tied a cord to the leg of each nestling, and named them No. 1, No. 2, No. 3 and No. 4, in order of their coming to the nest.[1] No. 1 and No. 2 I found at the same time. Those I numbered according to their weight — No. 1 was the heavier. I tied three cords to the leg of No. 3, but in some way they were all removed on the following day.

The rapidity with which the young mature is most remarkable. Three of the young measured at birth 1 and 11-16 inches, the fourth measured 1 and 9-16 inches, and the young weighed respectively, No. 1, 70 grains; No. 2, 60 grains; No. 3, 46 and 1-2 grains; and No. 4, 60 grains. No 2 was the most sleepy bird in the nest. No 1, at the end of the ninth day, was the lightest in weight and had the longest wings, 2 and 3-16 inches. On the tenth day I succeeded in weighing and measuring but No. 2 and No. 4. (This was the eighth birthday of No. 4.) No. 4 was by far the heaviest and most active bird in the nest, weighing nearly 480 grains. He was not so heavily feathered as the others, his wings were a half inch shorter than No. 2's and his length was one inch less than No. 2's. From birth No. 4 was the most vigorous of all the young. At his first weighing he stood supported on his belly, heels and wings, the latter spread wide apart, held up his head and gave the food reaction all the time he was out of the nest. He fully possessed the power of orientation. The increase in weight of this young bird was very marked. He very nearly multiplied his original weight by

[1] I borrowed this device for distinguishing the nestlings from "At the Sign of the Northern Flicker," by Althea R. Sherman. The Wilson Bulletin, Sept.-Dec. 1910.

eight in eight days. It was as if a baby that weighed ten pounds at birth increased his weight at the rate of twenty pounds on the second day, eighty pounds on the eighth day, and one hundred and sixty pounds on the sixteenth day. The gain in weight of No. 3 that weighed 46 and 1-2 grains in the beginning was even more remarkable. On the eighth day No. 3 weighed 420 and 1-2 grains.

Specific notes on the daily progress of the four young Olive-backed Thrushes.

July 11, the *beginning* of the first day in the nest. As before stated, on the tenth day of incubation, at 11:30 a. m. I found two limp young Thrushes lying prostrate in the nest. They had been out of the shell sufficiently long for the dark, burnt-umber, natal down, one-half inch long to dry. The birds, including their beaks, feet, and legs were a tint of burnt-orange. They rested on the belly, had a tendency to curl up in the form of an egg and roll until stopped by the legs and wings.

The *end* of the first day. The three oldest birds lay prone in the nest, vibrating as one. One gave the food reaction in the nest, but when removed from the nest, none gave the food reaction. Their beaks, feet and legs were a trifle yellower than the rest of the body.

The *end* of the second day. The three oldest birds bid not gave the food reaction out of the nest. The natal down on the fourth nestling at 11:55 a. m. was not entirely dry. When

Length of Body.	(ALL MEASUREMENTS IN INCHES.) Bird 1.	Bird 2.	Bird 3.	Bird 4.
July 11.....	1 and 11-16	1 and 11-16		
July 12.....	2	1 and 3-4	1 and 11-16	
July 13.....	2 and 3-16	2 and 1-8	1 and 7-8	1 and 9-16
July 14.....	2 and 9-16	2 and 11-16	2 and 1-16	1 and 13-16
July 15.....	2 and 13-16	2 and 14-16	2 and 9-16	2 and 1-32
July 16.....	3 and 1-8	3 and 3-16	2 and 11-16	2 and 1-4
July 17.....	3 and 1-2	3 and 5-8	3 and 1-8	2 and 11-16
July 18.....	3 and 5-16	3 and 5-16	3 and 3-8	2 and 7-8
July 19.....	3 and 3-8	3 and 5-16	2 and 13-16?	3 and 3-8
July 20.....	3 and 3-4	3 and 3-4	3 and 7-16	3 and 3-8
July 21.....		4 and 11-16		3 and 5-8

Young Olive-backed Thrushes, 10 days old,
begging for food.
(Photo by Alfred A. Langewald, Jr.)

Length of Wing.	Bird 1.	Bird 2.	Bird 3.	Bird 4.
July 11.....	1-8	1-8		
July 12.....	5-32	5-32	1-8	
July 13.....	3-16	3-16	5-32	1-8
July 14.....	3-8	3 8	3-16	5-32
July 15.....	9-16	7-16	3-8	3-16
July 16.....	3-4	11-16	9-16	5-16
July 17.....	1 and 1-8	15-16	13-16	5-8
July 18.....	1 and 7-16	1 and 5-16	1 and 1-8	13-16
July 19.....	1 and 7-8	1 and 9-16	1 and 9-16	1 and 1-8
July 20.....	2 and 3-16	2	1 and 15-16	1 and 11-16
July 21.....		2 and 5-16		2

Weight	Bird 1	Bird 2	Bird 3	Bird 4
July 11.	70 grains	60 grains		
July 12.	86 and 1-2 grains	70 grains	46 and 1-2 grains	
July 13.	125 grains	99 and 1-2 grains	84 and 1-2 grains	60 grains
July 14.	210 and 1-2 grains	180 grains	133 grains	91 grains
July 15.	273 grains	258 grains	206 grains	169 and 1-2 grs,
July 16.	320 and 1-2 grains	310 and 1-2 grains	258 grains	205 grains
July 17.	349 and 1-2 grains	358 and 1-2 grains	305 grains	285 grains
July 18.	364 and 1-2 grains	401 and 1-2 grains	375 grains	343 grains
July 19.	292 and 1-4 grains	418 and 3-4 grains	418 and 3-4 grains	418 and 3-4 grs.
July 20.	390 and 1-4 grains	422 and 1-4 grains	420 and 1-4 grains	440 and 1-4 grs.
July 21.		445 and 1-4 grains		Considerably more than 445 and 1-4 grs.

Birds limp, prostrate in the nest, a tint of burnt-orange, natal down one-half inch long. — All the Nestlings.

A swollen, powder-colored band extends across the wings, and down the upper part of the spine. — Beginning of the first day.

Eyes beginning to open. — End of the first day.

Tips of quills extend beyond the wings. Dark pores on head; a few enlarged pores on the underparts and rump, a dark, swollen band down the spine, across the coccyx and wings. — End of second day.

All the feather tracts well indicated. — End of third day.

Quills across the coccyx. — End of fourth day.

Birds well covered with quills and pin feathers. — End of the fifth day.

Quills look light at the tip as they do just before the feathers begin to protrude. — End of the sixth day.

Birds make the preening motion.

Feathers begin to appear. Birds preen. — End of seventh day.

Birds pretty well feathered out.	End of the eighth day.
Quill casings have nearly disappeared.	End of the ninth day.
Feathers practically free of quill casings.	End of the tenth day.

placed on my dress, No. 4 raised himself from his side, turned over onto his belly, supported himself by his wings and heels, and gave the food reaction all the time he was out of the nest; he threw himself about on the scale pan so that I had to guard him constantly to keep him from throwing himself out of the pan entirely.

The young, as before, nestled together in the middle of the nest, vibrating as one, their heads falling over each other.

The *end* of the third day. All the young, save one, gave the food reaction when out of the nest. They rested on their feet and wings as well as the belly and moved forward on my dress. Still their heads rested on one another in the nest, and they lay in a limp, vibrating mass.

The *end* of the fourth day. The young changed their position in the nest, twittered when being fed, panted with the heat, and gave the food reaction when they heard sounds around the nest. One young bird lay with his head held up against the rim of the nest, and one yawned.

The *end* of the fifth day. All the young seemed very strong and rested their heads against the rim of the nest, all gave the food reaction when out of the nest and moved forward on my dress. I had all that I could do to keep any of them on the scale pan. The two older birds grasped the edge of the pan with their claws. The rough interior of the nest enabled them to move about freely.

On this day, one of the birds fed a large, green caterpillar, the larva of the cherry spinx moth, I think, to one of the young in a peculiar manner. At both the first and second nest, the parent birds usually thrust the insects well down into the throat of the young. The Thrush laid this large caterpillar across the open beak of the birds several times. Nestling after nestling attempted to swallow the caterpillar, but if the end remained in sight, the bird drew it from the throat again.

Olive-backed Thrush bristling while shielding young from sun.
(Photo by Cordelia J. Stanwood.)

She continued this treatment very rapidly, until the young became so excited and eager for the caterpillar that when it touched a throat in which the food reaction was just right, it instantly glided out of sight.

The beaks of the young were much soiled with mud. Probably, some of it came from earthworms as I noticed the birds feeding them to the young in both nests. Aside from this, the young and the nest were immaculate.

The parent birds called to the young constantly when they were removed from the nest so that I found it almost impossible to take their weights or measurements. The muscles of the nestlings were so strong that they drew themselves up into the sitting posture, and were apparently uncomfortable when obliged to assume any other position. After this day their body measurements were far from satisfactory.

The *end* of the sixth day. One bird pecked slightly at his pin feathers and quills, but there were no loose casings as yet. Another snapped his beak as if at an insect. The tips of the quills were lighter as they are before the feathers begin to protrude. This was the closing day of the quill stage.

The *end* of the seventh day. All the birds had speckled heads. No. 1 walked readily on my lap, without spreading his wings to balance himself, leaped from the tray, looked into my face in an interested way, fell from a stool and alighted on his feet, twittered a great deal, gave the food reaction, and a chirp of alarm. The excrement of the older birds began to resemble that of the more mature bird. No. 1 and No. 2 preened a great deal. No. 3 not at all; and No. 4 was still in the quill stage. No 3 had very few feathers, but he did have a few.

The *end* of the eighth day. One bird winnowed the air with his wings, and scratched his ear with his toe; the birds gave the food reaction out of the nest. I had much difficulty in returning the two larger birds to their cradle.

The *end* of the ninth day. All the birds have speckled heads. The birds that hatched last have been much more active than those that came from the egg first. They have